



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,085	11/24/1999	KARTHIKEYAN (NMI) RAMASAMY	8343	5848

26890 7590 01/16/2003

JAMES M. STOVER
NCR CORPORATION
1700 SOUTH PATTERSON BLVD, WHQ4
DAYTON, OH 45479

EXAMINER

DODDS, HAROLD E

ART UNIT	PAPER NUMBER
----------	--------------

2177

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/449,085

Applicant(s)

RAMASAMY ET AL.

Examiner

Harold E. Dodds, Jr.

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 38, 40, 51, 53, 64, and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "operator" may designate a person or an abstract operator. The language in these claims should be modified to distinguish between these two possible meanings of the word "operator".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 36, 43, 45, 49, 56, 58, 62, 69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, II et al. (U.S. Patent No. 6,230,312), Epperson et al. (U.S. patent No. 5,754,771), and Posse (U.S. Patent No. 5,544,175).

5. Callahan rendered obvious independent claims 36, 49, and 62 by the following:

"...for each thread, generating first execution trace information..." at col. 10, lines 12-17 and col. 8, lines 19-23.

"...for each thread, generating second execution trace information..." at col. 10, lines 12-17 and col. 8, lines 19-23.

"...and writing the first execution trace information and the second execution trace information..." at col. 10, lines 26-50 and col. 8, lines 19-23.

Callahan does not teach the use of query coordinators, the use of data servers, and the use of log files.

6. However, Epperson teaches the use of query coordinators and the use of data servers as follows:

"...in the query coordinator..." at col. 8, lines 43-46.

"...in the data server..." at col. 5, lines 51-57.

It would have been obvious to one of ordinary skill at the time of the invention to combine Epperson with Callahan since both Callahan and Epperson use the execution of tasks, the use of trace information, the use of threads, and perform testing.

Epperson does not teach the use of log files.

7. However, Posse teaches the use of log files as follows:

"...to at least one execution log file..." at col. 9, lines 25-29 and col. 10, lines 54-57.

It would have been obvious to one of ordinary skill at the time of the invention to combine Posse with Callahan and Epperson since Callahan, Epperson, and Posse use the execution of tasks, the use of trace information, and perform testing and Epperson and Posse use sampling and performance analysis.

8. As per claims 43, 56, and 69, the "...first execution trace information and

the second execution trace information are written to a single file...," is taught by Callahan at col. 10, lines 46-50.

9. As per claims 45, 58, and 71, the "...reconstructing the execution trace information from the log file..." is taught by Posse at col. 8, lines 28-33, col. 9, lines 27-29, col. 10, line 67, col. 11, lines 1-3, and col. 10, lines 54-57.

10. Claims 37, 50, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, and Posse as applied to claims 36, 49, and 62 above respectively, and further in view of Bhargava et al. (U.S. Patent No. 5,680,603).

As per claims 37, 50, and 63, the "...first execution trace information..." is taught by Epperson at col. 8, lines 19-23,
but the "...comprises an execution plan..."
and "...in terms of one or more operator trees..." are not taught by either Callahan, Epperson, or Posse.

However, Bhargava teaches the use of execution plans and the use of operator trees as follows:

"...Block 206 represents the step of generating a compiled set of runtime structures called an application plan from the compiled SQL statements..." at col. 3, lines 23-25.

"...The conflict-free operator assignment attempts to generate an operator tree for a given association tree by assigning joins, outer joins and full outer joins to the interior nodes of the association tree..." at col. 14, lines 53-56.

It would have been obvious to one of ordinary skill at the time of the invention to combine Bhargava with Callahan, Epperson, and Posse since Callahan, Epperson, Posse, and Bhargava teach the execution of tasks, Epperson, Posse, and Bhargava

use performance analysis, Epperson and Bhargava perform queries and use databases, and Posse and Bhargava use nodes.

11. Claims 38, 51, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, Posse, and Bhargava as applied to claims 37, 50, and 63 above respectively, and further in view of Kimmerly et al. (U.S. Patent No. 5,628,017) and Rhodes et al. (U.S. Patent No. 6,073,110).

As per claims 38, 51, and 64, the "...first execution trace information..." is taught by Epperson at col. 8, lines 19-23, but the "...further comprises operator dispatch information..." and the "...operator start times and operator stop times..." are not taught by either Callahan, Epperson, Posse, or Bhargava.

However, Kimmerly teaches the use of operator dispatch information as follows:

"...An event-response dispatcher is adapted to receive information identifying the event-response routine, save the execution state of the execution engine, cause the execution engine to execute the event-response routine, and restore the execution state of the execution engine that existed before the event-response routine was executed..." at col. 3, lines 9-16.

It would have been obvious to one of ordinary skill at the time of the invention to combine Kimmerly with Callahan, Epperson, Posse, and Bhargava since Callahan, Epperson, Posse, Bhargava, and Kimmerly teach the execution of tasks and Callahan, Epperson, and Kimmerly teach the use of routines and subroutines.

Kimmerly does not teach the use of operator start times and operator stop times.

However, Rhodes teaches the use of operator start times and operator stop times as follows:

Art Unit: 2177

"...The scheduling is preferably accomplished by matching the activity name data to a graphical calendar schedule that references the activity data, and assigning attributes to the calendar schedule including time interval data, start time data, stop time data, number of days spanned data, frequency of occurrence data and duration range data..." at col.2, lines 6-11.

It would have been obvious to one of ordinary skill at the time of the invention to combine Rhodes with Callahan, Epperson, Posse, Bhargava, and Kimmerly since Callahan, Epperson, Posse, Bhargava, Kimmerly, and Rhodes teach the execution of tasks, Callahan, Epperson, Posse, and Rhodes teach the use of time as an element, Epperson, Bhargava, and Rhodes teach the use of databases, Posse, Bhargava, and Rhodes teach the use of nodes, and Epperson and Rhodes teach the use of activities.

12. Claims 39, 52, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, and Posse as applied to claims 36, 49, and 62 above respectively, and further in view of Junkin (U.S. Patent No. 6,493,717) and Harel (U.S. Patent No. 5,873,081).

As per claims 39, 52, and 65, the "...second execution trace information..." is taught by Epperson at col. 8, lines 19-23, but the "...includes a session identifier (ID) and a query ID..." is not taught by either Callahan, Epperson, or Posse.

However, Junkin teaches the use of session identifiers as follows:

"...The "UserID" or "uid" parameter (passed as "u") is a unique Session identifier..." at col. 9, lines 66-67.

It would have been obvious to one of ordinary skill at the time of the invention to combine Jurkin with Callahan, Epperson, and Posse since Callahan, Epperson, Posse, and Jurkin teach the execution of tasks and the use of trace information, Callahan, Epperson, and Jurkin teach the use of networks and the use of routines and subroutines, Epperson and Jurkin teach the performing of queries, the use databases, and the use of servers, Posse and Jurkin teach the use of nodes.

Jurkin does not teach the use of query IDs.

However, Harel teaches the use of query IDs as follows:

"...At step 360, the query identifier from which the expression tree was derived, QueryID1, is added to a list of query identifiers maintained for each node..." at col. 6, lines 54-56.

It would have been obvious to one of ordinary skill at the time of the invention to combine Harel with Callahan, Epperson, Posse, and Jurkin since Callahan, Epperson, Posse, Jurkin, and Harel teach the execution of tasks, Callahan, Epperson, Posse, and Harel teach performing testing, Callahan, Epperson, Jurkin, and Harel teach the use of networks, Epperson, Posse, and Harel teach the use of samples, Epperson, Jurkin, and Harel teach the performing of queries, and Posse, Jurkin, and Harel teach the use of nodes.

13. Claims 40, 53, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, Posse, Junkin, and Harel as applied to claims 39, 52, and 65 above respectively, and further in view of Zhou et al. (U.S. Patent No. 5,995,511).

As per claims 40, 53, and 66, the "...second execution trace information..." is taught by Epperson at col. 8, lines 19-23, the "...further includes, for each operator..." is taught by Harel at col. 2, lines 16-18, the "...an identifier (ID) for the operator..." is taught by Harel at col. 2, lines 16-18 and col. 10, lines 30-33, but the "...start time stamp..." and the "...finish time stamp..." are not taught by either Callahan, Epperson, Posse, Junkin, or Harel.

However, Zhou teaches the use of start time stamps and finish time stamps as follows:

"...As noted above, if the time stamp 87 corresponds to the eligible start time, the scheduling unit 43 in step 175 will increment the time stamp 87 by the group's time interval to generate the finish time; on the other hand, if the time stamp 87 corresponds to the finish time, the scheduling unit 43 will merely use the time stamp as the finish time..." at col. 21, lines 33-38.

It would have been obvious to one of ordinary skill at the time of the invention to combine Zhou with Callahan, Epperson, Posse, Junkin, and Harel since Callahan, Epperson, Junkin, Harel, and Zhou teach the use of networks, Callahan, Epperson, Posse, and Zhou teach the use of time as an element, and Posse, Junkin, Harel, and Zhou teach the use of nodes.

14. Claims 41, 42, 54, 55, 67, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, Posse, Junkin, Harel, and Zhou as

applied to claims 40, 53, and 66 above, and further in view of Bamford et al. (U.S. Patent No. 6,243,702).

As per claims 41, 54, and 67, the "...start time stamp and the finish time stamp...", is taught by Zhou at col. 21, lines 33-38, but the "...reference a logical time...", is not taught by either Callahan Epperson,, Posse, Junkin, Harel, or Zhou.

However, Bamford teaches the use of logical time stamps as follows:

"...To provide transactions with database snapshots, a multi-version parallel database system typically stamps each version of data with a logical timestamp..." at col. 1, lines 31-33.

It would have been obvious to one of ordinary skill at the time of the invention to combine Bamford with Callahan, Epperson, Posse, Jurkin, Harel, and Zhou since Callahan, Epperson, Posse, Jurkin, Harel, and Bamford teach the execution of tasks, Callahan, Epperson, Jurkin, Harel, Zhou, and Bamford teach the use of networks, Callahan, Epperson, Posse, Zhou, and Bamford teach the use of time as an element, Posse, Jurkin, Harel, Zhou, and Bamford teach the use of nodes, Epperson, Jurkin, Harel, and Bamford teach the use of queries, and Epperson, Jurkin, and Bamford teach the use of databases and the use of servers.

15. As per claims 42, 55, and 68, the "...start time stamp and the finish time stamp...", is taught by Zhou at col. 21, lines 33-38 and the "...reference a clock time...", is taught by Bamford at col. 4, lines 6-10.

16. Claims 44, 57, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, and Posse as applied to claims 36, 49, and 62 above respectively, and further in view of Naidu et al. (U.S. Patent No. 5,752,002).

As per claims 44, 57, and 70, the "...first execution trace information and the second trace information..." is taught by Epperson at col. 8, lines 19-23, but the "...are written to different files..." is not taught by either Callahan, Epperson, or Posse.

However, Naidu teaches writing to different files as follows:

"...The graphical user interface 70 then invokes the performance analyzer parser in between the ASIC design 10 and the functional model, the performance analyzer 30 writes the analyzed data into different files in ASCII format for display of the data, and returns the status flag to the parser..." at col. 7, lines 41-46.

It would have been obvious to one of ordinary skill at the time of the invention to combine Naidu with Callahan, Epperson, and Posse since Callahan, Epperson, Posse, and Naidu teach the execution of tasks, the use of testing, and the use of time as an element, Callahan, Epperson, and Naidu teach the use of routines, and Epperson, Posse, and Naidu use performance analysis.

17. Claims 46, 48, 59, 61, 72, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, and Posse as applied to claims 36, 49, and 62 above respectively, and further in view of Filepp et al. (U.S. Patent No. 5,594,910).

As per claims 46, 59, and 72, the "...reconstructing the execution trace information..." is taught by Posse at col. 8, lines 29-34, col. 8, lines, 43-48, col. 10, line 67, and col. 11, lines 1-3,
the "...according to the thread ID..." is taught by Callahan at col. 17, lines 29-32,
the "...and presenting the reconstructed execution trace information..., is taught by Posse at col. 11, lines 48-52, col. 8, lines 29-34, col. 8, lines, 43-48, col. 10, line 67, and col. 11, lines 1-3,
but the "...accepting a presentation command...",
the "...time stamp...",
and the "...presentation command...", are not taught by either Callahan, Epperson, or Posse.

However, Filepp teaches the use of presentation commands and time stamps as follows:

"...However, such messages are coded so as to be able to accept user input in various stages of completion, thus mimicking conversational transactions...." at col.18, lines 27-29.

"...They provide the origin; i.e., drawing points, and dimensions of each page partition and different values for presentation commands such as palette and background color..." at col. 10, lines 36-39.

"...The originating application sends an FM64 with "status type=terminate", and data mode=EBCDIC FM64 text follows the header with "action field"=A (Action), "module name"=SSSx0nnnn, "reference number"=0, Text=((timestamp =HHMMSS), Number of current users=NNNNN)..." at col. 19, lines 37-42.

It would have been obvious to one of ordinary skill at the time of the invention to combine Filepp with Callahan, Epperson, and Posse since Callahan, Epperson, Posse,

and Filepp teach the execution of tasks, the performance of testing, and the use of time as an element, Callahan, Epperson, and Filepp teach the use of activities, routines, and subroutines, and the use of networks, Epperson and Filepp teach performing queries, the use of databases, and the use of servers, and Posse and Filepp teach the use of nodes.

18. As per claims 48, 61, and 74, the "...first execution trace information and the second execution trace information...", is taught by Epperson at col. 8, lines 19-23, the "...include a thread ID...", is taught by Callahan at col. 17, lines 29-32, the "...and a time stamp...", is taught by Filepp at col. 19, lines 37-42, the "...synchronizing...", is taught by Posse at col. 11, lines 62-67 and col. 12, lines 1-2, and the "...execution trace...", is taught by Callahan at col. 8, lines 19-23, and the "...trace records..." is taught by Epperson at col. 15, lines 38-41 and col. 9, lines 45-49, and the "...according to the time stamp..." is taught by Filepp at col. 19, lines 37-42.

19. Claims 47, 60, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan, Epperson, and Posse as applied to claims 36, 49, and 62 above respectively, and further in view of Carey et al. (U.S. Patent No. 6,285,997).

As per claims 47, 60, and 73, the "...generating first execution trace information...", is taught by Callahan at col. 8, lines 19-23, the "...in the query coordinator...", is taught by Epperson at col. 8, lines 43-46, the "...and generating second execution trace information...", is taught by Callahan at col. 8, lines 19-23,

the "...in the data server..." is taught by Epperson at col. 5, lines 51-57,
but the "...is performed while executing the query....," is not taught by either Callahan,
Epperson, or Posse.

However, Carey teaches performing other routines while executing a query as
follows:

"...Its major tasks are performed later, during query execution,
under the control of the Query Evaluation Subsystem (QES)
210..." at col. 10, lines 32-35.

It would have been obvious to one of ordinary skill at the time of the invention to
combine Carey with Callahan, Epperson, and Posse since Callahan, Epperson, Posse,
and Carey teach the execution of tasks, the performance of testing, and the use of time
as an element, Callahan, Epperson, and Carey teach the use of networks, Epperson
and Carey teach performing queries, the use of databases, and the use of servers, and
Posse and Carey teach the use of nodes.

Conclusion

20. Any inquiry concerning this communication or earlier communications from
the examiner should be directed to Harold E. Dodds, Jr. whose telephone number is
(703)-305-1802. The examiner can normally be reached on Monday - Friday 8:00 -
4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, John E. Breene can be reached on (703)-305-9790. The fax phone
numbers for the organization where this application or proceeding is assigned are (703)

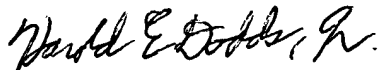
Application/Control Number: 09/449,085

Page 14

Art Unit: 2177

746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.



Harold E. Dodds, Jr.
Patent Examiner
January 13, 2003



GRETA ROBINSON
PRIMARY EXAMINER